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A.D. 1879, 15th August. N° 3301.

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**Surgical Instrument for the Removal of Stone from  
the Bladder.**

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LETTERS PATENT to William John Butler, of 2, Delamere Crescent, W., in  
the County of Middlesex, Surgeon, for the Invention of "A NEW OR  
IMPROVED SURGICAL INSTRUMENT FOR THE REMOVAL OF STONE FROM THE  
BLADDER."

Sealed the 10th February 1880, and dated the 15th August 1879.

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PROVISIONAL SPECIFICATION left by the said William John Butler at the  
Office of the Commissioners of Patents on the 15th August 1879.

WILLIAM JOHN BUTLER, of 2, Delamere Crescent, W., in the County of Middlesex,  
Surgeon. "A NEW OR IMPROVED SURGICAL INSTRUMENT FOR THE REMOVAL OF  
5 STONE FROM THE BLADDER."

This Invention consists of an instrument for the purpose of removing stone from  
the bladder by a different method than heretofore practiced, and this I propose to  
effect substantially as follows:—

I construct an instrument composed of a number of blades (of an oval form by  
10 preference) mounted on a tube capable of being revolved within another tube in  
such a way that the blades can be made to form a closed chamber when inserted  
into the bladder so as to enclose the stone desired to be removed. This removal  
is effected by injecting into the chamber formed by the blades (through the  
aforesaid inner tube) certain acids that will dissolve the stone.

15 It may be found desirable to attach to the blades a flexible covering for the  
purpose of preventing leakage of the acid into the bladder.

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[Price 6d.]

*Butler's Improved Surgical Instrument for the Removal of Stone from the Bladder.*

SPECIFICATION in pursuance of the conditions of the Letters Patent filed by the said William John Butler in the Great Seal Patent Office on the 14th February 1880.

WILLIAM JOHN BUTLER, of 2 Delamere Crescent, W., in the County of Middlesex, Surgeon. "A NEW OR IMPROVED SURGICAL INSTRUMENT FOR THE REMOVAL OF 5 STONE FROM THE BLADDER."

This Invention consists of an instrument for the purpose of removing stone from the bladder by a different method than heretofore practised, and this I propose to effect substantially as follows:—

I construct an instrument composed of a number of blades (of an oval form by 10 preference) mounted on a tube capable of being revolved within another tube in such a way that the blades can be made to form a closed chamber when inserted into the bladder so as to enclose the stone desired to be removed.

And in order to explain my said Invention more fully I will now proceed to 15 describe the same with reference to the accompanying Drawings.

## DESCRIPTION OF THE DRAWINGS.

Figure 1 shows a top elevation of the instrument when open and ready for inserting.

Figure 2 shows a side elevation of same.

Figure 3 represents a side elevation when closed and as it would appear when 20 inserted in the bladder.

Figure 4 is an end view of Figure 3.

Figure 5 is a cross section at A, B, Figure 3.

Figure 6 is a longitudinal section of Figure 3.

Figures 7, 8, 9, 10 and 11 are detached views hereinafter referred to. 25

At each of the above Figures the same letters denote corresponding parts; a 30 shows the outside tube of the instrument; b, the inner tube; c shows the curved blades, the outer blade c' (having a flange or side piece c'') is fixed to the tube a, and the inner blade is keyed or otherwise fixed to the tube b. All the blades (excepting those marked c' and c'') have a ridge, shown at d, Figure 11, on their 35 concave surfaces, and a ridge e, shown at Figure 10, on their convex surfaces for the purpose of opening and closing the blades, as hereafter described. All these blades have a common spindle formed by the screw f and lower end of the tube b which pass through the holes g, g, in the blades, these holes are shown clearly at Figures 7, 8, and 9. The instrument may also have a small pipe h communicating with 35 the interior of the outer tube a, in order that an alkali or other neutralizing agent may be injected into the bladder by means of the holes i in the event of a leakage from the cavity of the instrument. The action is as follows:—The instrument being inserted into the bladder open, as shown at Figures 1 and 2, is then partially 40 closed and manipulated until the stone is received thereinto; the inner tube b is then rotated by means of the milled head l by which the inner blade c' (being fastened to this tube as aforesaid) will be caused to revolve on the screw f and lower part of tube b dragging with it the other blades on account of the ridges d and e catching against one another; the inner tube is turned round as far as 45 possible when the instrument will assume the closed position shown at Figures 3, 4, 5, 6, thus forming a closed chamber with the stone in it. Acid or other suitable solvent is then injected through the inner tube b which communicates with the interior of the closed chamber to dissolve the stone, after which the stone being dissolved the cavity is washed out or otherwise evacuated. The instrument is 50 again opened by a reverse action and withdrawn, and the operation is completed. 50 I would remark that the blades must be made so as to fit closely to avoid any

*Butler's Improved Surgical Instrument for the Removal of Stone from the Bladder.*

leakage of acid or other solvent into the bladder, but in case of an accident I have provided the pipe A for injecting an alkali or other neutralizing agent as aforesaid. The blades may if found desirable have some soft substance between them for better security against leakage, or a flexible or elastic material may be fitted  
5 thereto for this purpose. I may modify the arrangement for working the blades by increasing the number of tubes and causing the blades to rotate in opposite directions so as to form the closed cavity, and dispensing with the flanged portion c<sup>d</sup> of the blade c'.

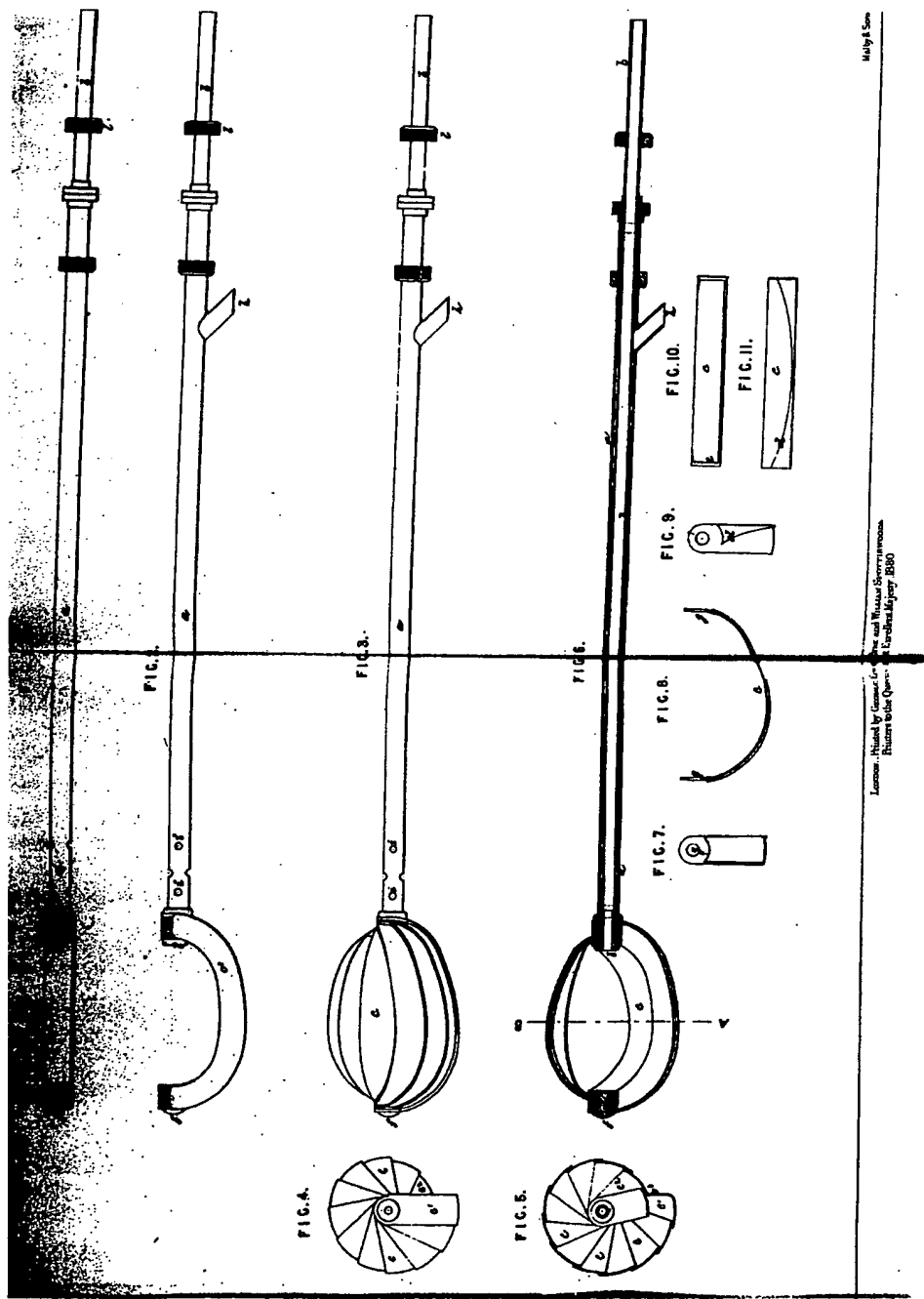
Having thus described the nature and object of my said Invention and the  
10 means for carrying the same into practical effect, I would remark in conclusion that I do not intend to confine myself to the precise details hereinbefore described as the same may be varied, but what I claim as constituting this Invention is constructing an instrument composed of a series of blades (with or without a flexible or elastic material) constructed and arranged in such a manner as to enable it to be closed  
15 and opened from without, forming a closed chamber capable of enveloping a stone or stones in the bladder, in combination with tubes, all substantially as and for the purposes set forth.

In witness whereof, I, the said William John Butler, have hereunto set my  
20 hand and seal, this Eleventh day of February, in the year of our Lord One thousand eight hundred and eighty.

W. J. BUTLER. (L.S.)

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